



New Enhanced Area Equipment: BAR-97 EIS

MAY 1998

The BAR-97 Emissions Inspection System (EIS) is required in all Smog Check stations located in the Enhanced Areas (California's smoggiest regions). The new system tests vehicles under simulated driving conditions to detect oxides of nitrogen (NOx). The equipment also tests for hydrocarbons (HC) and carbon monoxide (CO). This replaces the BAR-90 equipment, which will still be used in the Basic and Change of Ownership Areas.

New Equipment. The BAR-97 EIS consists of a 5-gas analyzer, other hardware, software, a fuel cap tester, and a dynamometer with restraints. The most distinctive component of the equipment is the dynamometer, which is a treadmill-like device that tests a vehicle under simulated driving conditions. When necessary, the BAR-97 EIS can also test vehicles in the two-speed idle test mode. In addition, technicians must have a Digital Storage Oscilloscope to help diagnose emissions system problems.

NOx Testing. Testing under actual driving conditions is essential for measuring NOx emissions, since NOx cannot be detected unless the engine temperature is high. To reach these high temperatures, the vehicle must be tested while simulating actual driving conditions on the dynamometer. This is called Acceleration Simulation Mode (ASM). California must begin NOx testing because NOx is a key ingredient in smog formation and NOx reductions are required under federal law by the U.S. Environmental Protection Agency (USEPA).

Enhanced Area Vehicles. Starting in 1998, only full BAR-97 Acceleration Simulation Mode tests will be accepted, except for vehicles with full-time four-wheel drive, vehicles with All-Wheel drive, vehicles with traction control, and vehicles over 8,500 pounds. These vehicles will be tested in the two-speed idle mode.

Stations. All Enhanced Area stations, including Gold Shield stations, Test-Only Stations, and Referee Centers, are required to have a BAR-97 EIS. Basic Area stations with Enhanced Area customers must use the BAR-97 EIS to continue testing these vehicles.

Technician License. To operate the BAR-97 EIS, technicians must have an Advanced Emissions Specialist (EA) license.

Other Uses. The BAR-97 EIS can be used as a diagnostic tool. Besides being able to diagnose emissions system problems, technicians can use the dynamometer to quickly pinpoint abnormalities that occur when the vehicle is being driven, such as transmission problems.

*California's
Enhanced Areas
Are Regions That
Do Not Meet
Federal Ozone
Health
Standards.*